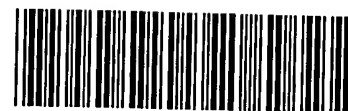


0590
0507

#3



OIPÉ

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/051,307

DATE: 05/02/2002

TIME: 15:52:27

Input Set : A:\59440141.app

Output Set: N:\CRF3\05022002\J051307.raw

```

3 <110> APPLICANT: DAI, ZIYU
4     SHI, LIFANG
5     HOOKER, BRIAN S.
7 <120> TITLE OF INVENTION: GENE PROMOTERS ISOLATED FROM POTATO AND USE THEREOF
9 <130> FILE REFERENCE: 059440/0141
11 <140> CURRENT APPLICATION NUMBER: 10/051,307
12 <141> CURRENT FILING DATE: 2002-01-22
14 <150> PRIOR APPLICATION NUMBER: 60/263,224
15 <151> PRIOR FILING DATE: 2001-01-23
17 <160> NUMBER OF SEQ ID NOS: 14
19 <170> SOFTWARE: PatentIn Ver. 2.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 1595
23 <212> TYPE: DNA
24 <213> ORGANISM: Solanum tuberosum
26 <400> SEQUENCE: 1
27 gtaatacgcac tcaactatagg gcacgcgtgg tcgacggccc tggctggtat ctttgtttga 60
28 aaaaattgga aaagaacgta ggaccacatg gaccttgggt gcaacaatat tgttgtcctc 120
29 caaatgtggt acaaggattg ttacatcctc cgggtacttt aagttgacca gggcattcac 180
30 catttatatt tgccgtgcat tgaattgtgt ggcatttccc tccacttggg ttagtcgggg 240
31 cgaaagtcac cggatatatta aatccatcaa ctaaagaaat gtcccagaaa tctaagttgt 300
32 tgaactggtc caaggcgtac tcggctaggg tgtttgggtg tttgccccac ccggtgcact 360
33 gcaggacacc accacaatca ccagtcatgc acgaacctct accagcacca tgaagttac 420
34 atccagtacg accccatata cctgccatcg tagtgcacct aggcgcacat atgaccaca 480
35 tttggccccg atcgaaacgt cggcaccgcg tttcgggggt gatgcgcgcc aaacgatgta 540
36 tggacagttg ttgcgtacct cgatagtggc agcataagtg aaagtcacaa aagcaagaag 600
37 ggagaaaaca aaagaagatc tcaagtagcc catgtttgtt gaaatttata tgtggacaaa 660
38 ttatttttgg tactttatat atagggatat ggcggctttt ggcactacgg atattaatcg 720
39 tattatatag caatatcata ctttgactaa ttataaacga aatatattac aatatgattt 780
40 ggtaaacggt gaggtggaaa aatgtataag agccgcctaa taattaatta ttttatgaat 840
41 atagcctata gttacaagtt aacttttatt ggtgataact ttgacatata aactctgtaa 900
42 cgtgacggaa tttttcttaa aactaaatat taaaagcag ctattttcag atttttcgtg 960
43 gccaaagttt cttgcatact tatctatgcc cttttttact tttatcgttc tagccttcta 1020
44 ggtacacggt tgaacataaa aaatcataaa aattgaaagt aaaaattagt tttttttttt 1080
45 catattactc gtagggatca tttgttagat caatctgaaa tatacaaacc attctgattt 1140
46 taaaatcaca accattctgc caagggaag tctatgtgat ccgtgacaag tggtttgatt 1200
47 attcttagtc tagattggag tcacaacttt tagtgcaaat atctattaaa agaacccta 1260
48 ttgatgcaaa tatctattaa aagaacctct attcatgctt tttttttttt tacgatcgga 1320
49 gcatggatat atttactaat taaaataaat tgggaaggat tgatcgacaa gtcacaaagc 1380
50 ttatcgtcga tccacattaa aataacgtta gtatggctgc ttttagagaa acaagtggat 1440
51 catgtataat ttagttttta aatatctcct ataaatatct atatatacct ctaaaactaa 1500
52 atgcatctaa caacacaaat ataaacttag attcttttaa gaaattgcag aattaaatg 1560
53 aggcacataa gtctatggtg aagttggtt ctttc

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/051,307

DATE: 05/02/2002

TIME: 15:52:27

Input Set : A:\59440141.app

Output Set: N:\CRF3\05022002\J051307.raw

56 <210> SEQ ID NO: 2

57 <211> LENGTH: 1598

58 <212> TYPE: DNA

59 <213> ORGANISM: Solanum tuberosum

61 <400> SEQUENCE: 2

```

62 gtaatacgac tcactatagg gcacgcgtgg tcgacggccc gggctggtat ctttgtttga 60
63 aaaaattgga aaagaacgta ggaccacatg gaccttggtg gcaacaatat tgttgtcctc 120
64 caaatgtggt acaaggattg ttacatcctc cgggtacttt aagctgacta ggacattcac 180
65 cttttatatt tgccgtgcat tgaattgtgt ggcatttccc tccacttgga ttagtcgggg 240
66 cgaaagtcac cggatatatta aatccatcaa ctaaagaaat gtcccagaaa tctaagttgt 300
67 tgaactggtc caaggcgtac tcggctaggg tgtttggtgg tttgccccac ccggtgcact 360
68 gcaggacacc accacaatca ccagtcatgc acgaacctct accagcacca ccgaagttag 420
69 atccagtaag accccatata cgtgccatcg tagtgccctt aggcgcacat atgaccacac 480
70 tttggcctcg atcgagacgt cgggcaccgc ctatcgggtc gatgccgccc aaacgatgta 540
71 tggacagttg ttggcgggtac ctcgatagtg acagcataag tgaaagtcac aaaagccaga 600
72 agggagaaac caaaagaaga tctcaagtag cccatgtttg ttgaaattta tatgtggaca 660
73 aattatTTTT ggtactttat atatagggat atggcggctt ttggcactac ggatattaat 720
74 cgtattatat aacaatatca tactttgact aattataaac gaaatatatt acaatatgat 780
75 ttggtaaacg ttgaggtgga aaaatgtata agagccgcct aataattaat tattttatga 840
76 atatagccta tagttacaag ttaactttat ttggtgataa ctttgacata taaactctgt 900
77 aacgtgacgg aatttttctt aaaactaaat attaaaaagc agctattttc acatttttctg 960
78 tggccaaagt ctcttgcata cttatctatg cccattttta cttttatcgt tctagccttc 1020
79 taggtacacg ttgaacata aaaaatcata aaaattgaaa gtaaaaatta gttttttttt 1080
80 ttcattattc tcgtatggat catttggttag atcaatctga aatatacaaa ccattctgat 1140
81 tttaaaatca caaccattct gctaatggg gaagtctatg tgattcgtgg caagtgtttg 1200
82 attattctta gtctagattg gagtcacaac ttttagtgca aatatctatt aaaagaacct 1260
83 ctattgatgc aaatatctat taaaagaacc cctattcata ctttatttat ttttacgac 1320
84 ggagcatgga tatatttact aattaaaata aattgggagg aattgatoga caagccatca 1380
85 agcttatcgt cgatccacat taggataacg ttagtatggc tgtttttaga gaaacaagt 1440
86 gatcatgtac aattgagtta aaaaatatct cctataaata cctgtctatc cctcttaaac 1500
87 caaatacatc taacacacaa aatataaact tagattcctt aaagaaattg cagaattaaa 1560
88 tggaggcaaa taagtctatg gtgaagttgg ttgctttc
1598

```

91 <210> SEQ ID NO: 3

92 <211> LENGTH: 1546

93 <212> TYPE: DNA

94 <213> ORGANISM: Solanum tuberosum

96 <220> FEATURE:

97 <221> NAME/KEY: modified_base

98 <222> LOCATION: (1248)

99 <223> OTHER INFORMATION: a, t, c or g

101 <400> SEQUENCE: 3

```

102 atctttgttt gaaaaaattg gaaaagaacg taggaccaca tggaccttgg gtgcaacaat 60
103 attgttgctc tccaaatgtg gtacaaggat tgttacatcc tccgggtact ttaagctgac 120
104 taggacattc accatttata tttgccgtgc attgaattgc gtggcatttc cctccacttg 180
105 gattagtcgg ggcgaaagtc atcggtatat taaatccatc aactaaagaa atgtcccaga 240
106 aatctaagtt gttgaactgg tccgaggcgt actcggctag ggtgtttggc ggtttacccc 300
107 acccggtgca ctgcaggaca ccaccacaat caccagtcac gcacgaacct ctaccagcac 360
108 catcgaagtt acatccagta cgaccccata tacgtgccat cgtagtgccc ctaggcgcat 420
109 caatgaccca cgtttggcct cgatcgagac gtcggccacc gcctatcggg gtcgatgctg 480

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/051,307

DATE: 05/02/2002

TIME: 15:52:27

Input Set : A:\59440141.app

Output Set: N:\CRF3\05022002\J051307.raw

110 cccagacggt gtatggacag ttgttgcgta cctcgatagt ggcagcataa gtgaaagtca 540
 111 caaaagcaag aagggagaaa acaaaagaag atctcaagta gcccatgttt gttgaaattt 600
 112 atatgtggac aaattatttt tggactttta tatataggga tatggcggct tttggcacta 660
 113 tggatattaa tcgtattata taacaatatc atactttgac taattataaa caaataatat 720
 114 tacaatatga tttggtaaac gttgaggtgg caaaatgtat aagagccgcc taataattaa 780
 115 ttattttatg aatatagact atagttacaa gtgaacttta tttggtgata acttggacat 840
 116 ataaactctg tatcgtgacg gaacttttct taaaactaaa tattaataag cagctatttt 900
 117 aatatttttc gtggccaaag tttcttgcat acttatctat gccatttttt actttttatcg 960
 118 ttctagcctt ctaggtacgc gtttgaacat aaaaatcat aaaaattgaa agtaaaaatt 1020
 119 agtttttttt catattactc gtatggatca tttgttagat caatgtgaaa tatacaaattc 1080
 120 attctgattt taaaatcata actattctgc atgatgggaa cgtctatggt gattcgtgac 1140
 121 aagtgtttga tttattctaa gtctggattg gagtcacaac ttttagtgca aatatctatt 1200
 W--> 122 aaaagaaccc ctatttgatg caaaagtcaa taaatattta atatcatnct ttattttattt 1260
 123 ttacgatcgg agcatggata catttactaa ttaaaataaa ttggaaggaa ttgatcgaca 1320
 124 agtcatcaag cttatcgtcg atccacattc ccctaacgtt agtatggctg cttttagaga 1380
 125 aacaagtgga tcatgtataa tttagttttc ccctatctcc tataaatatc tatatatacc 1440
 126 tctaaaacta aatgcactta acaacacaaa tataaactta gattctttaa agaaattgca 1500
 127 gaattaaatg gaggcaataa agtctatggt gaagttggtt gctttc 1546
 130 <210> SEQ ID NO: 4
 131 <211> LENGTH: 1175
 132 <212> TYPE: DNA
 133 <213> ORGANISM: Solanum tuberosum
 135 <400> SEQUENCE: 4
 136 actatagggc acgcgtggtc gacggccctg gctggtctga tttaggagta tttcattcaa 60
 137 tcaattttat aagaatttac agtctgcact ctggagacat tcttatttca taatgtaata 120
 138 ttgcgttaatt ggggaagtga agtttcttga ggcgcttttc tagtggtttt aacttcattt 180
 139 tgtgctatca tagttacttg ttttctgtta aggtaagatt ttattgacgt atatgggaaa 240
 140 ttccctgttaa gagctgacac ggtaaactgg acctaaatat atttagaact atgcaccacc 300
 141 ccttcaaggg gaggttaagt tttttttttt ttttgaggtg tttgggaaag acaaaaaatg 360
 142 ttttttaaaca ottattatta ggccaaaaag tataaaaata aactaaaagc taaaagttag 420
 143 gtatgccoga cttatgattt ttaactttta gcttataagc tacttaaaga aagccaatcc 480
 144 aaacgacctg ttcttaggtg taagattttg aagactaagc aaattttatt tcatgaaaca 540
 145 acattgtttt tgttttagcga tatgccatta agtcgtttat gttctaatta atctggtttt 600
 146 gtaggctggt ttccatgcaa aatgtattcc agcagctagc agtttacagg agcatatagt 660
 147 taaatcaaca ccggcaagat atagtagtac acaggcatgt ttggaaaaat gaccatttct 720
 148 ggaactgata ataaaagggt aattttctgt tttactttct gaccactgga tctctttttt 780
 149 tgcattcctt gtttatggac agtcattgct aaatgacatg gcatttcttc atgagtacta 840
 150 ctgctcatat gtggaatata tttcactcat ttgacataaa agcgtataaa gaattttact 900
 151 aaaacaatgt atctccactt ttgcagggtc aagggtcatg atatgttggc acccttcact 960
 152 gctgggtggc aaagtactga tgtggatcct ttaattatag agaagtctga ggtagattt 1020
 153 atgtctactt ttgctgtcta acttaagaga agtttatata tctttcgtga tcaactttta 1080
 154 cattttgaca taggatccc acgtatatga catgcaaggg aggaagtatc ttgatactct 1140
 155 agctggtttg tgggtcacag cactaggggg gaacg 1175
 158 <210> SEQ ID NO: 5
 159 <211> LENGTH: 1188
 160 <212> TYPE: DNA
 161 <213> ORGANISM: Solanum tuberosum
 163 <400> SEQUENCE: 5
 164 actatagggc acgcgtggtc gacggcccg gctggtctga tttaggagta tttcattcaa 60

RAW SEQUENCE LISTING

DATE: 05/02/2002

PATENT APPLICATION: US/10/051,307

TIME: 15:52:27

Input Set : A:\59440141.app

Output Set: N:\CRF3\05022002\J051307.raw

```

165 tcaattttat aagaatttac agtctgcaact ctggagacac tottatttca taatgtaata 120
166 ttgcgtaatt ggggaagtga ggtttcttga ggcgcttttc tagtgttttt aacttcattt 180
167 tgtgctatca tagttacttg ttttctgtta aggtaagatt ttattgacgt atatgggaaa 240
168 ttctttgtta gagctgacac ggtaaaactgg acctaaataa atttagaact atgcaccacc 300
169 cctttaagga tgtttgatc gtcttatttt aagtagtttt gaacttttaa gcattttttt 360
170 ttttttggag gtgtttggga aagacaaaaa atgtttttta acacttatta ttaggccaaa 420
171 aagtataaaa ataaactaaa agctaaaagt tgggtatgcc cgacttatga tttttaactt 480
172 ttagcttaca agctacttaa agaaagccaa tctaaacgac ttgttcttag gtgtaagatt 540
173 ttgaagacta agcaaatctt tttccatgaa acaacattgt ttttgtttag cgatatgcca 600
174 ttaagtcgtt tatgttctaa ttaatctggt tttgtaggct ggtttccatg caaaacgtat 660
175 tccagcagtt agcagtttac aggagcatat agttaaatca acaccggcaa gatatagtag 720
176 tacacaggca tgtttgaaa atgacatttc tggaaactgat aataaagggt aatttctgtt 780
177 ttactttcct accactggat ctcttttttt gcattccttg tttatggaca gtcattgcta 840
178 aatgacatgg ctttatttca tgagtattac tcgtcatatg tggaaatata ttcactcatt 900
179 tgacataaaa gctgcacgta caagcgtaa aagaatttta ctaaaacaat gtatctccac 960
180 ttttgcaggt tcaagggtca tgatatgttg gcacccttca ctgctgggtg gcaaagtact 1020
181 gatgtggatc ctttaattat agagaagtct gaggttagat ttatgtctac ttttgctgtc 1080
182 taacttaaga gaagtttata tatctttcgt gatcaacttt tacatttcga catagggatc 1140
183 ccacgtatat gacatgcaag ggaggaagta tcttgatact ctagctgg 1188
186 <210> SEQ ID NO: 6
187 <211> LENGTH: 529
188 <212> TYPE: DNA
189 <213> ORGANISM: Solanum tuberosum
191 <400> SEQUENCE: 6
192 accagcttag attcttttaa gaaattgcag aattaaatgg aggcaaataa gtctatgggtg 60
193 aagttgggtt ctttcttgat aatttttgca tcatgctttc aatctctcac tgetcaagat 120
194 ttggaaatcg aagttagtga tggcttaaat gtcttgcaac tacatgatgt gtctcagtca 180
195 ttttgtccag gtgtgacgaa agaaagtgg ccagaacttc tagggacacc agctaagttt 240
196 gcaaagcaaa taattcagaa ggaaaatcca aaattaacaa atgttgaaac tctactgaat 300
197 ggttctgctt ttacagaaga tttgagatgc aatagagttc gtctttttgt taatttattg 360
198 gacattgttg tacaaactcc caaagttggt taaacaaaat taattcatgt tataatatatg 420
199 tatctagcct ccagaaaaat aaattggagt tgtaatatgg ttaatgcttc cactatattt 480
200 ggtgataaat aaacgtggct ttttaattat aaaaaaaaaa aaaaaaaaaa 529
203 <210> SEQ ID NO: 7
204 <211> LENGTH: 2035
205 <212> TYPE: DNA
206 <213> ORGANISM: Solanum tuberosum
208 <400> SEQUENCE: 7
209 ccgatatattg atttgcaatt tagcaacgaa ttgattcgaa ggatcatatc aaatggctaa 60
210 gatttcttgt cttattggat ccaccgtcaa agcagctatc accgccagg ctcttttcca 120
211 tgcaaaacgt attccagcag ttagcagttt acaggagcat atagttaaat caacaccggc 180
212 agatatagtg agtacacagg catgtttgga aaatgacatt tctggaactg ataataaagg 240
213 gttcaagggt catgatatgt tggcaccctt cactgctggg tggcaaagta ctgatgtgga 300
214 tcttttaatt atagagaagt ctgagggatc ccacgtatat gacatgcaag ggaggaagta 360
215 tottgatact ctagctgggt tgtggtgcac agcactaggg gggaacgagc ctgccttgtt 420
216 tgatgctgcc actaagcaat taaacacatt gccattttac cattcatttt ggaaccgtac 480
217 aacaaaacct tctttggatc ttgcgaagga gcttctggat atgtttactg caaagaaaat 540
218 ggcaaaagct tttttcacca atagtggatc agaagccaat gatacccagg tgaagctggg 600
219 ttggtattat aacaatgctc ttggaaggcc aaacaaaaag aaatttatag ctcgagcaaa 660

```

RAW SEQUENCE LISTING

DATE: 05/02/2002

PATENT APPLICATION: US/10/051,307

TIME: 15:52:27

Input Set : A:\59440141.app

Output Set: N:\CRF3\05022002\J051307.raw

```

220 agcatatcat ggttcaactc ttattttctgc cagtctcact ggtcttcctg cattacatca 720
221 aaattttgat cttcctgctc catttggttct tcacaccgac tgtcctcatt attggcggtta 780
222 tcatctgccca ggtgagacag aggaggaggt ctctaccaga ttggctaaaa atttggaaga 840
223 tcttatcctc aaagaggggc ctgaaacaat agctgcttcc attgctgaac cagtcagtgg 900
224 ggcaggaggt gtcatacctc ctccagctac ctattttgat aagattcaag ctgtagtgaa 960
225 gaaatatgac attcttttca ttgcggatga ggtgatctgt gcctttggga ggcttggaa 1020
226 aatgtttggc tctgacatgt ataacatcaa acctgatctt gtctccttag caaaggctct 1080
227 ttcttctgca tatatgccaa ttggagctgt ccttgaagc cctgaagttt ctgatgta 1140
228 tcattctcaa agcaataaac ttggttcctt ttcccatgga ttcacttatt ctgggcatcc 1200
229 tgttgcatgc gcggtggcat tggaagctat taaaatctac aaggagcgaa atatggttga 1260
230 gagagtaaat acaatatccc caaagtttca agaaggtctg aaggagtttt ctgacagtcc 1320
231 cattatcgga gagattaggg gaattgggtt gatccttgcc acagagtttg cgaataacaa 1380
232 atctoctaat gatcctttcc ctctgaatg ggggtgttgg gcatattttg gagcacaatg 1440
233 tcagaagaat ggcagtgttg tacgtgttgc tggatgatac atcatgatgt ctctccatt 1500
234 tgtagttact ccagaagaac ttgacgagtt gattagcatc tatgggaaag cattgaggga 1560
235 aactgaaaag agagtagaag aactcaagtc tcagaagtga tattagttga cagcacaagc 1620
236 ttgacgatga cgaaaaaaac aaaaacaaat tcaagcacia taaaataaaa aaatcaaagt 1680
237 tgttggtat tctgtaaatg tccagaatga agtaatgagt ataattttta gtccaagttg 1740
238 ctctcttctt ctttcatttt acatgcagta tagtttcacc agttcactta ttgatgaaga 1800
239 tgtctatccc cttaaccagt tgtcacccaa gattaatgca ttttaccaaa aaatcgaatt 1860
240 tattaatcta tgttcttgta attaattgag ttttttttat gttcgagttt gtacgttaat 1920
241 gcacatttct cctataaagt cttttctgtc aataatattt tcttaaaagt aatcatgttg 1980
242 tatttgggat tcaataaaaa atgaatgctc gccaaacaaa aaaaaaaaaa aaaaa 2035
245 <210> SEQ ID NO: 8
246 <211> LENGTH: 22
247 <212> TYPE: DNA
248 <213> ORGANISM: Artificial Sequence
250 <220> FEATURE:
251 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
253 <400> SEQUENCE: 8
254 gtaatacgac tcactatagg gc 22
257 <210> SEQ ID NO: 9
258 <211> LENGTH: 19
259 <212> TYPE: DNA
260 <213> ORGANISM: Artificial Sequence
262 <220> FEATURE:
263 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
265 <400> SEQUENCE: 9
266 actatagggc acgcgtggt 19
269 <210> SEQ ID NO: 10
270 <211> LENGTH: 26
271 <212> TYPE: DNA
272 <213> ORGANISM: Artificial Sequence
274 <220> FEATURE:
275 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
277 <400> SEQUENCE: 10
278 gaaagcaacc aacttcacca tagact 26
281 <210> SEQ ID NO: 11
282 <211> LENGTH: 38

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/051,307

DATE: 05/02/2002
TIME: 15:52:28

Input Set : A:\59440141.app
Output Set: N:\CRF3\05022002\J051307.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; N Pos. 1248

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/051,307

DATE: 05/02/2002

TIME: 15:52:28

Input Set : A:\59440141.app

Output Set: N:\CRF3\05022002\J051307.raw

L:122 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:1200